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EXAMINER

CHANG, JON CARLTON

ART UNIT	PAPER NUMBER
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2623

DATE MAILED: 12/30/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/344,814

Applicant(s)

KOROBKIN, CARL P.

Examiner

Jon Chang

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-26, 28-48 and 51-61 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-48 is/are allowed.
- 6) ☒ Claim(s) 13-26, 28-41, 51-61 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Response to Applicants' Amendment and Arguments

1. The amendment filed August 27, 2003, has been entered and made of record.

Applicant's amendment addresses the issues raised in the rejection under 35 U.S.C. § 112, second paragraph. However, see the new rejection on the same ground due to the amendment to claim 57.

Applicant's arguments have been fully considered, but they are not persuasive for at least the following reasons.

On page 18, next to last paragraph, Applicant argues that Fisher and Reinhardt do not pertain to analogous environments. The Examiner disagrees. They are at least analogous because Reinhardt relates generally to allowing a model to be matched up with an underlaid photograph to give the impression that the model is part of the photograph (column 2, lines 22-25), which is similar to Fisher's invention. Additionally, both patents are classified in the same class (class 345) of the classification schedule of the U.S. Patent and Trademark Office. Patents within the same class of the classification schedule correspond to related subject matter.

In the paragraph bridging pages 19-20, Applicants argue that Reinhardt does not teach step f) of claim 13. Applicants state that column 7, lines 62-65 (cited by the Examiner) pertain to steps c) and d) of claim 13. The Examiner responds by pointing out that further reading from column 7 line 66 through column 8 line 10 shows Reinhardts' teaching of step f). Note that Reinhardt discloses calculating the geometric coordinates of each primitive (the objects) and projecting through the virtual

camera to yield an updated projected wireframe representation overlaid on the image. This updating essentially amounts to a transforming.

On page 25, first full paragraph, with regard to claim 26, Applicant argues that neither Fisher nor Reinhardt teach step f) of claim 13. The Examiner responds by pointing out that claim 26 does not have a "transforming" step which corresponds to step f) of claim 13.

On page 25, first full paragraph, Applicant states that claim 26 has been amended to receive camera parameters for the digital image of the space from the photogrammetric modeling engine, and an input to receive one or more product representation for selected products not of the space to be inserted into the space. The Examiner considers this to still read on the combination of Fisher and Reinhardt. As discussed in the previous office action, Reinhardt provides for the camera parameters. Note also that the intent of Fisher's invention is to allow selection of products not of the space and to insert them in the space.

On page 25, last full paragraph, with regard to claim 28, Applicant refers to step f) of claim 13. However, the Examiner notes that claim 28 does not have a step which corresponds to step f) of claim 13.

On page 26, first full paragraph, with regard to claim 30, Applicant argues that images of products do not have to be captured using some device. The Examiner agrees. As Applicant has stated, the images of Fisher can be created by texture mapping, etc. The Examiner adds, however, that such images can also be captured.

Art Unit: 2623

Further, additional reasons for combining Fisher and Reinhardt were given in the previous office action.

On page 27, first full paragraph, with regard to claim 32, Applicant argues that the Reinhardt's product is the object in the scene, while the product being referred to in the claim is an object that is not present in the scene but needs to be transformed by the camera and integrated into the scene. The Examiner responds by first pointing out that there does not appear to be any recitation in the claim that the camera transform the product. Furthermore, in Reinhardt's abstract, lines 1-2, the invention constructs a model on top of the image. This would at least imply that the product is not present in the scene initially.

On page 28, first full paragraph, with regard to claim 37, Applicant argues that the camera transforms the image of a real world object initially outside the scene. The Examiner responds by pointing out that in claim 28 (from which claim 37 depends), does not require the camera transforming the image of the object. Further, the transforming act is performed on either the scene digital image or the product representation. Therefore, there is no requirement that the product be transformed. Nevertheless, Reinhardt does teach transforming the product, as discussed in the previous office action.

On page 29, second full paragraph, with regard to claim 41, Applicant argues that the present invention differs from Reinhardt because in the present invention, the product digital image used for calculating the product image capture parameters refers to an image of a product not in the scene and to be inserted into the scene. The

Art Unit: 2623

Examiner notes, however, that claim 28 (from which claim 41 depends) does not require calculating product image capture parameters from the product digital image. The claim requires calculating the capture parameters from the scene digital image of the space.

On page 30, last sentence, with regard to claim 42, Applicant argues that the present invention differs from Reinhardt because in the present invention, the camera information of step d) is for a product that is not present in the scene that will be subsequently inserted into the scene. The Examiner agrees, in light of the language of the claim, including the language added by amendment. The Examiner therefore withdraws the rejection of claims 42-48. Claim 42 appears to differ from the other claims (e.g. claim 13, etc.) in that the camera information relates to the device which is used to capture in image of the product, whereas in the other claims, the camera information relates to the camera used to capture an image of the space.

Claim Rejections - 35 USC § 112

2. Claims 57-61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 57 recites (added language in the last clause), "the acquired camera" which is "acquired by calculating from the image..." There does not appear to be support in the original disclosure for "acquiring a camera."

Art Unit: 2623

Claim 57 recites (added language in the last clause), "a camera in the space from which the image was captured." There does not appear to be support in the original disclosure for the camera being "in the space" of which it is capturing an image. In other words, there does not appear to be support for the camera to both capture an image of the space, and to be in the space.

3. Claims 57-61 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 57 recites, "the camera was acquired by calculating from the image..." The original disclosure does not show how a camera can be acquired by calculations from an image.

Claim 57 recites (added language in the last clause), "a camera in the space from which the image was captured." The original disclosure does not explain how the camera can be "in the space" of which it is capturing an image. In other words, there is no explanation of how the camera can both capture an image of the space, and be in the space itself. This appears to be an impossibility.

Art Unit: 2623

4. Claims 57-61 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In the language added to the last clause of claim 57, "the acquired camera" lacks proper antecedent basis. The claim previously recites that an object representation is acquired, but does not recite that a camera is acquired.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 13-26, 28-41 and 51-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of U.S. Patent 6,331,858 to Fisher and U.S. Patent 6,333,749 to Reinhardt et al. (hereinafter "Reinhardt").

As to claim 13, Fisher discloses a method for generating remote presentations of products in situ for a user comprising the steps of:

a) prompting the user to provide a representation of a space in which a product is to be viewed in context (column 2, lines 47-50; column 5, lines 45-46);

b) accepting a product representation representing a product for which a three-dimensional geometric model exists or can be created (column 5, line 43);

e) accepting an input of a product location, the product location being a location in the space where the product is to be displayed in situ (column 5, lines 48-49);

g) forming an image of the space where the modified image has been modified to show the identified product in situ in the image with a proper proportion and perspective (column 1, lines 40-41; column 2, lines 11-13; column 5, lines 48-49).

Fisher does not disclose acquiring a digital image of the space, or the steps of c), d), f) and g) (as claimed). However, in an analogous environment, Reinhardt discloses:

acquiring a digital image of a space (column 4, lines 1-2; column 5, lines 5-8);

c) determining at least one dimension reference, wherein a dimension reference is a measurement of a distance in the space corresponding to a separation of two points on the digital image (column 11, lines 19-25);

d) calculating, from the image, the at least one dimension reference and reference information, camera parameters for a camera in the space from which the image was captured, wherein the camera parameters include at least a camera position and a focal length (abstract, lines 5-6);

f) transforming the geometric model of a product based on at least the camera position and the product location to form a transformed geometric model (column 3, line 67 to column 4, line 4; column 7, lines 62-65); and

g) combining the transformed geometric model and the digital image to form a modified image of the space (column 5, lines 25-27).

Reinhardt's technique would provide more realistic images of the space containing the products in situ, therefore it would have been obvious to one of ordinary skill in the art to modify Fisher's invention according to Reinhardt.

With regard to claim 14, Fisher discloses the method of claim 13, wherein the step of accepting a product representation comprises the steps of:

prompting the user to identify a product of interest from a set of products (column 2, lines 60-61; column 5, lines 46-50; allowing the user to select implies prompting of the user);

searching a collection of product representations to locate a member of the collection that matches the product identified by the user (column 2, lines 60-61; selection of one of a plurality of products implies that the a collection of such products is searched and located, and matches that identified by the user); and

accepting the matching product representation (column 2, lines 63-64; column 5, lines 48-51).

Regarding claim 15, repeating steps b), e) and f) for second and subsequent selected products would have been an obvious extension to the combined Fisher-Reinhardt method. Note that to only perform the steps for one product would defeat the purpose of the invention, and would make the invention essentially useless for retail transactions over the Internet.

As to claim 16, Fisher teaches prompting the user to acquire a three-dimensional product of interest to the user (e.g., column 5, lines 65-66; column 6, line 7). In

combining Fisher and Reinhardt as discussed above with regard to claim 1, a three-dimensional geometric model would be acquired (e.g., see Reinhardt, column 4, line 1).

Regarding claim 17, repeating step a) for second and subsequent images of the space and using each of the provided images would have been an obvious extension to the combined Fisher-Reinhardt method. Keeping in mind that Fisher allows different viewpoints of the space (column 2, lines 11-13), to only perform the step for one product would defeat the purpose of the invention, and would make the invention essentially useless for retail transactions over the Internet.

As to claim 18, Fisher, as modified by Reinhardt discloses the method of claim 13, wherein the modified image of the space is a two-dimensional view of a three-dimensional geometric model (note Fisher's column 1, lines 44-45; and the 3D geometric model taught by Reinhardt), the method further comprising a step of moving a camera position of the modified image of the space to simulate moving around in the space (e.g., Fisher, column 2, lines 11-13).

With regard to claim 19, Fisher discloses the method of claim 13, wherein the step of prompting the user to identify the product from a set of products is performed using a commerce server that serves product models and further comprising a step of transmitting the digital image to the commerce server (column 3, line 27).

As to claim 20, Fisher discloses the method of claim 13, wherein the step of prompting the user to identify the product from a set of products is performed using a commerce application that receives product models and further comprising a step of

Art Unit: 2623

providing the digital image to the commerce application (column 5, line 66 to column 6, line 2).

With regard to claim 21, Reinhardt further teaches that the camera parameters include camera position, camera rotation (orientation), focal length (abstract, lines 5-6). Reinhardt does not explicitly mention that a camera parameter includes center of projection. However, the Examiner takes Official Notice that the camera parameter center of projection is well known. It would have been obvious to calculate this camera parameter because it would provide an enhanced 3D scene.

As to claim 22, Reinhardt further teaches that the reference information includes correspondences between two-dimensional image features and three-dimensional structures (column 11, lines 19-25; the points are in the 2D image, distance is taken in 3D).

As to claim 23, Reinhardt further teaches that the step of determining the at least one dimension reference is a step of inputting the at least one dimension reference, wherein a dimension reference is a measurement of a distance in the space corresponding to a separation of two points on the digital image (column 11, lines 19-25).

As to claim 24, Reinhardt further teaches that the step of determining the at least one dimension reference is a step of assuming a default scale and using the default scale to determine the at least one dimension reference column 11, lines 19-25, the default scale is implied by the ruler distance).

With regard claim 25, Fisher discloses the method of claim 13, wherein the three-dimensional model for a product is a planar representation of an object and a texture map to be applied to a surface of the object (column 4, lines 39-40).

With regard to claim 26, reference is made to the discussion provided above for claims 13 and 19. Specific structure, such as storage, engines, etc., are considered inherent in Fisher and Reinhardt, given that they are computer based systems, and any computer programmed to perform the indicated method would provide the required structure.

Claim 28 is similar to claim 13. The discussion provided above for claim 13 is applicable to claim 28.

With regard to claim 29, Fisher discloses the method of claim 28, wherein the product representation includes a texture map associated with the product (column 4, lines 13-14, 39-40).

As to claim 30, Fisher is silent with regard to the product representation includes at least a product digital image, captured by a product image capture device positioned to capture a digital image of the product. However, the Examiner contends that the images of the products must be captured using some kind of device. Further, Reinhardt teaches utilizing a digital camera to capture a digital image of objects (column 7, lines 18-19). It would have been obvious to utilize a digital camera as taught by Reinhardt in Fisher's invention because of the convenience provided by digital cameras.

As to claim 31, Reinhardt further teaches that the product representation includes a capture position, capture angle of rotation and focal length (abstract, lines 5-7; note

that these parameters are derived from the images, implying that the representation includes them).

With regard to claim 32, Reinhardt further teaches that the product representation includes product image capture parameters including at least a representation of the position of the product image capture device when the digital image of the product was captured (abstract, lines 5-7; note that these parameters are derived from the images, implying that the representation includes them).

With regard to claim 33, Reinhardt further teaches that the product image capture parameters include projections of geometric elements from the product onto the product digital image (column 5, lines 25-28).

With regard to claim 34, Reinhardt further teaches that the capture parameters for the image of the scene include projections of geometric elements from the scene onto the scene digital (column 5, lines 25-39).

As to claim 35, Reinhardt further teaches that the capture parameters for the image of the scene include an angle of rotation for the image capture device in the space (abstract, lines 5-7).

As to claim 36, Fisher, as modified by Reinhardt, discloses the method of claim 28, wherein the step of inputting a product representation is preceded by the steps of: capturing a product digital image using the product image capture device (note as above, Reinhardt provides for the product image capture device); and calculating, from the product digital image, product image capture parameters that include at least a representation of the product image capture position and a

representation of the product image capture focal length (note as above, Reinhardt teaches this, e.g., in the abstract, lines 5-7).

As to claim 37, Reinhardt further teaches that the step of transforming results in the one or more transformed digital images sharing common capture parameters, the common capture parameters including at least a capture position (column 11, lines 1-7; column 12, lines 12-14).

As to claim 38, Fisher discloses the method of claim 28, further comprising a step of prompting the user to identify the product from a set of products for which a three-dimensional geometric model exists or can be created (column 2, lines 60-61; column 5, lines 46-50; allowing the user to select implies prompting of the user).

As to claim 39, see the discussion above for claim 23.

As to claim 40, repeating step of combining would have been an obvious extension to the combined Fisher-Reinhardt method. To only perform the step for one product would defeat the purpose of the invention, and would make the invention essentially useless for retail transactions over the Internet.

With regard to claim 41, see the remarks above for step d) of claim 13.

With regard to claim 51, reference is made to the remarks provide above for claims 13, 19 and 26.

As to claim 52, remarks analogous to those provided above for claim 14.

Regarding claims 53-56, having the various components in either the server or the client is seen as a decision based upon designer preference. A designer would have a particular component in either the client or the server based on his or her needs

for the given application. This is not considered a patentable difference from the prior art.

Allowable Subject Matter

7. Claims 42-48 allowed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

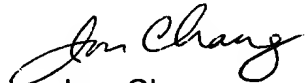
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jon Chang whose telephone number is (703)305-8439. The examiner can normally be reached on M-F 8:00 a.m.-6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703)308-6604. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


Jon Chang
Primary Examiner
Art Unit 2623

Jon Chang
December 23, 2003